

Amendments to the Claims

1. (original) A method of providing minimal power consuming redundant computing elements for a distributed application comprised of a plurality of components, wherein the plurality of components are hosted by a plurality of computing elements that can each enter a power saving mode, the method comprising:

- detecting an impending or actual failure of an affected computing element;
- identifying instances of components executing on the affected computing element;

- signaling a cold spare computing element to enter a normal operation mode from the power saving mode; and

- initializing instances of identified components on the cold spare computing element now operating in normal operation mode.

2. (currently amended) The method of claim [2] 1 and further comprising:

- gracefully suspending all instances of identified components, ~~if possible,~~ executing on the affected computing element; and

- signaling the affected computing element to enter a hot swap mode from the normal operation mode.

3. (currently amended) The method of claim [3] 2 and further comprising:

- replacing the affected computing element with a replacement computing element;

- signaling the replacement computing element to enter the normal operation mode from the hot swap mode;

- initializing instances of identified components on the replacement computing element now operating in the normal operation mode;

- gracefully suspending all instances of identified components on the cold spare computing element; and

signaling the cold spare computing element to enter the power saving mode from the normal operation mode.

4. (original) A computer program product comprising:

at least one computer usable medium having computer readable code embodied therein for providing availability of minimal power consuming redundant computing elements for a distributed application comprised of a plurality of components, wherein the plurality of components are hosted by a plurality of computing elements that can each enter a power saving mode, the computer program product including:

first computer readable program code devices configured to detect an impending or actual failure of an affected computing element;

second computer readable program code devices configured to identify instances of components executing on the affected computing element;

third computer readable program code devices configured to signal a cold spare computing element to enter a normal operation mode from the power saving mode; and

fourth computer readable program code devices configured to initialize instances of identified components on the cold spare computing element now operating in the normal operation mode.

5. (currently amended) The computer program product of claim 4 further including:

fifth computer readable program code devices configured to gracefully suspend all instances of identified components, ~~if possible~~, executing on the affected computing element; and

sixth computer readable program code devices configured to signal the affected computing element to enter a hot swap mode from the normal operation mode.

6. (original) The computer program product of claim 5 further including:

seventh computer readable program code devices configured to detect a replacement of the affected computing element with a replacement computing element;

eighth computer readable program code devices configured to signal the replacement computing element to enter the normal operation mode from the hot swap mode;

ninth computer readable program code devices configured to initialize instances of identified components on the replacement computing element now operating in the normal operation mode;

tenth computer readable program code devices configured to gracefully suspend all instances of identified components on the cold spare computing element; and

eleventh computer readable program code devices configured to signal the cold spare computing element to enter the power saving mode from the normal operation mode.

7. (original) A computer system comprising:

a backplane;

a plurality of host processor cards coupled to the backplane, with the plurality of host processor cards hosting a distributed application comprised of a plurality of components, and at least one of the plurality of cards designated as a cold spare host processor card that is normally kept in a power saving mode; and

a management unit coupled to the back plane, the management unit operable to signal each of the plurality of host processor cards to enter the power saving mode and a normal operation mode, and executing a program that:

detects an impending or actual failure of an affected host processor card of the plurality of host processor cards;

identifies instances of components executing on the affected host processor card; signals the cold spare host processor card to enter the normal operation mode from the power saving mode; and

initializes instances of identified components on the cold spare host processor card now operating in normal operation mode.

8. (currently amended) The computer system of claim 7 wherein the program executing on the management unit also:

gracefully suspends all instances of identified components, ~~if possible,~~ executing on the affected host processor card; and

signals the affected host processor card to enter a hot swap mode from the normal operation mode.

9. (original) The computer system of claim 8 wherein the program executing on the management unit also:

detects replacement of the affected host processor card with a replacement host processor card;

signals the replacement host processor card to enter the normal operation mode from the hot swap mode;

initializes instances of identified components on the replacement host processor card now operating in the normal operation mode;

gracefully suspending all instances of identified components on the cold spare computing element; and

signaling the cold spare computing element to enter the power saving mode from the normal operation mode.